

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

STATE OF OKLAHOMA,)	
)	
Plaintiff,)	
)	
vs.)	
)	Case No. 05-CV-329-GKF-PJC
TYSON FOODS, INC., et al.,)	
)	
Defendants.)	

ORDER

This matter comes before the court on the State of Oklahoma’s Motion in Limine to Preclude Expert Testimony of Defendants’ Witness Wayne M. Grip [Doc. No. 2059]. Grip is a testifying expert hired by defendants in the areas of photo interpretation and photogrammetry. He has submitted two separate expert reports: The first, submitted in October 2008, maps the historical meanders of the Illinois River and the extent of recent commercial development in the Arkansas portion of the IRW. The second, submitted in January 2009, quantifies the volume of material which has eroded from the banks of the Illinois River since 1972 as a result of the river, upon occasion, abruptly changing course (i.e., the volume of material that was actually eroded by the river itself). The State challenges only the second report.

The State has argued that Mr. Grip lacks sufficient qualification to offer expert opinion on this topic. Further, it contends his methodology in quantifying volume of “relocated” sediments is unreliable. Finally, it asserts his opinion is irrelevant because he cannot relate the movement of sediments to the movement of nutrients in the Illinois River.

I. Legal Standard

Federal Rule of Evidence 702 provides:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods to the facts of the case.

Thus, Rule 702 imposes on the trial judge an important “gate-keeping” function with regard to the admissibility of expert opinions. *Ralston v. Smith & Nephew Richards, Inc.*, 275 F.3d 965, 969 (10th Cir. 2001).

First, the court must determine whether the expert is qualified by “knowledge, skill, experience, training, or education” to render an opinion. *Id.* An expert witness is qualified under Rule 702 when he possesses “such skill, experience or knowledge in that particular field as to make it appear that his opinion would rest on substantial foundation and would tend to aid the trier of fact in his search for the truth.” *Graham v. Wyeth Labs.*, 906 F.2d 1399, 1408 (10th Cir. 1990).

Second, the court must ensure that the scientific testimony being offered is not only relevant, but reliable. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 589 (1993).

The Tenth Circuit has stated:

To be reliable under *Daubert*, an expert’s scientific testimony must be based on scientific knowledge, which implies a grounding in the methods and procedures of science based on actual knowledge, not subjective belief or unsupported speculation. In other words, an inference or assertion must be derived by the scientific method...[and] must be supported by appropriate validation—*i.e.* good grounds based on what is known. While expert opinions must be based on facts which enable [the expert] to express a reasonably accurate conclusion as opposed to conjecture or speculation...absolute certainty is not required. The plaintiff need not prove that the expert is undisputably correct or that the expert’s theory is generally accepted in the scientific community. Instead, the plaintiff must show that the method employed by the expert in reaching the conclusion is scientifically sound and that the opinion is based on facts which satisfy Rule 702’ reliability

requirements.

Dodge v. Cotter Corporation, 328 F.3d 1212, 1222 (10th Cir. 2003) (citations omitted).

In *Daubert*, the Supreme Court identified four nonexclusive factors the trial court may consider to assist in the assessment of reliability:

- (1) whether the opinion at issue is susceptible to testing and has been subjected to such testing;
- (2) whether the opinion has been subjected to peer review;
- (3) whether there is a known or potential rate of error associated with the methodology used and whether there are standards controlling the technique's operations; and
- (4) whether the theory has been accepted in the scientific community.

Daubert, 509 U.S. at 593-94. This list is not exclusive, and district courts applying *Daubert* have broad discretion to consider a variety of other factors. *Dodge*, 328 F.3d at 1222, citing *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999).

To be relevant, the testimony must “assist the trier of fact to understand the evidence or to determine a fact in issue.” Fed.R.Evid. 702. This consideration has been described as one of “fit.” *See Daubert*, 509 U.S. at 591. “‘Fit’ is not always obvious, and scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.” *Id.*

In sum, the objective of the gate keeping requirement “is to ensure the reliability and relevancy of expert testimony. It is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho Tire*, 526 U.S. at 152.

II. Analysis

A. Grip's Qualifications

In challenging Grip's qualifications, the State characterizes his work as a foray into fluvial geomorphology. The State takes the position Mr. Grip is not qualified because he has no certifications as a geologist and is not a member of any professional geological association, and has published no peer reviewed articles in geology or geomorphology.

However, Grip's work in this case was simply in the area of photogrammetry. Specifically, using photogrammetry, he attempted to quantify the volume of dirt or other material which has eroded from the banks of the Illinois River or has been lost to meanders of the river over time. The State does not dispute that photogrammetry is a recognized scientific specialty. It is defined as the "science of gathering dimensions from photographs." *See Heatherly v. Alexander*, 421 F.3d 638, 645 (8th Cir. 2005). The State also does not dispute Grip's expertise in photogrammetry.

Therefore, the court finds Grip is qualified to render opinions related to his photogrammetry work to quantify volumes of dirt eroded from the banks of the Illinois River or lost over time to meanders of the river.

B. Grip's Methodology

In this case, Grip was asked to quantify the volume of dirt or other material which has eroded from the banks of the Illinois River or has been lost to meanders of the river over time. He did this by employing the same methodology used to compute volumes of material in "cut and fill" projects. Specifically, he started with historical aerial photographs of the Illinois River. He then used aerial photography and photogrammetry to provide three dimensional models of the

river and surrounding land over a period of time. He then used terrain modeling software commonly utilized by photogrammetrists to compute the volume of dirt and other materials which had disappeared over time due to meandering of the river.

The State has challenged to Grip's methodology, arguing he should have conducted onsite investigations or measurement to confirm the accuracy of his interpretations. The state cites no authority for this proposition, and indeed, it appears the purpose of photogrammetry is to avoid the need for onsite measurements. The court finds Grip's methodology meets the *Daubert* standard for reliability.

C. Relevance of Grip's Testimony

The gravamen of the State's challenge to Grip appears to be the relevance of his work. The State claims that since Grip does not relate the movement of sediments to the movement of nutrients in the Illinois River, then his report about sediment movement is irrelevant.

The defendants take the position that bank erosion and erosion caused by abrupt changes in the river course are potential contributors of phosphorus to the Illinois River. The State, in response, argues such erosion is de minimus and need not be taken into account. The purpose of Grip's testimony, then, is to rebut that argument by quantifying the magnitude of river-caused erosion. Defendants represent that other witnesses will provide testimony regarding phosphorus in the eroded soil.

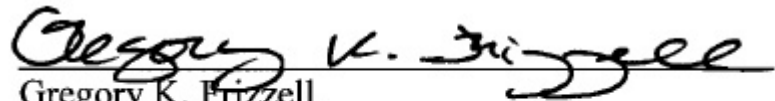
Grip's work, then, is part of defendants' effort to show erosion is responsible for some portion of the phosphorus in the Illinois River. Clearly, this is a relevant topic.

III. Conclusion

The court finds that Grip is qualified to testify regarding his photogrammetry work, that

his methodology was reliable and that his work is relevant to the issue of whether and to what extent gradual erosion of the banks of the Illinois River and erosion due to abrupt events has contributed to phosphorus levels in the Illinois River Waterway. Therefore, the State's Motion in Limine to Preclude Expert Testimony of Mr. Grip [#2059] is denied.

ENTERED this 12th day of August, 2004.


Gregory K. Frizzell
United States District Judge
Northern District of Oklahoma